

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: DOMESLE, R.

Examiner: STALDER, M.A..

No.: 10/535,589

Group Art Unit: 4162

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Confirmation No. 7501

For: Method for Coating a Catalyst Carrier Containing Two Different Partial Structures with a Catalytically Active Coating, and Catalyst Obtained Thereby

Customer No.: 23719

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Commissioner for Patents  
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DECLARATION OF DR. DOMESLE

1. I, Rainer Domesle, hereby declare that:
2. I am co-inventor of the above application and I am an expert in the areas of catalytically active coatings and methods of applying them to carriers.
3. I received my M.S in Chemistry ("Diplom-Chemiker") from Justus-Liebig-Universität, Gießen, Germany, in 1976 and my Ph.D. Chemistry in 1979 from the Justus-Liebig-Universität, Gießen, Germany. I have worked extensively for 28 years in the areas of catalysis, material development and catalytically active coatings as well as methods of applying them to carriers.
4. I submit this declaration based upon: (i) my training, knowledge, education, and experience in chemistry, notably in the fields of catalytically active coatings and

methods of applying them to carriers; (ii) my review of the above-referenced application and the history of the prosecution of this application; and (iii) my review of the prior art cited by the Examiner during prosecution of this application including U.S. Patent No. 5,139,993 (Schmidt) and U.S. Patent No. 6,534,021 (Maus).

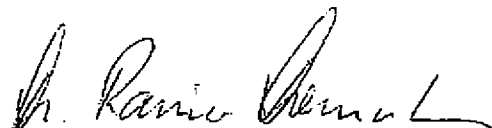
5. I disagree with the Examiner's opinion discussed in the Office Action of 25 June 2009 that Schmidt and Maus make my invention obvious.
6. First, I am a co-inventor of the Schmidt patent mentioned by the Examiner in the Office Action so I am very knowledgeable about this reference and what we invented.
7. From my reading of the Schmidt reference, Schmidt and I were improving thermal shock resistance of monolithic catalysts by pre-coating a ceramic monolithic carrier, before the application of catalytic components, with an organic filling material which can be melted and burned out and which contains a dispersion of very fine solid particles, by heating the carrier above the melting point of the filling material, then applying the catalytic components and then burning out the filling material (See Schmidt's abstract). Thus, we were solving a different problem, than what is in the current application.
8. In the present application we intended to avoid the situation where a porous partial structure of the catalyst support is impaired in its function or even rendered completely useless by excessive deposition of a coating dispersion. How we solved this problem was that we used a coating dispersion to make a catalyst support containing at least two partial structures which differ in their absorptivity for the coating dispersion. Therefore, we were solving a different problem than mentioned in Schmidt.
9. Although the same or similar dispersions may be used in both Schmidt and the present application, the very same dispersions when employed in the ceramic carrier of Schmidt do not impair the dispersion coating of the ceramic carrier of Schmidt while said dispersions actually do exactly that when applied to the materials of the present application, where the absorptivity of at least one partial structure of the two partial structures that are present according to the present application is modified.
10. Consequently, it can not be concluded from reading Schmidt that the dispersion

mentioned in the Schmidt reference that is known not to impair the dispersion coating indeed has the technical effect to do exactly that, to impair the dispersion coating on a partial structure of a different substrate as in claim 1 of the present application.

11. Furthermore, Schmidt merely teaches to employ the dispersion disclosed therein to improve the thermal shock resistance of a ceramic monolithic carrier while the problem in the present application is completely different, namely to avoid excessive coating of a porous partial structure that would impair its function or would even render it completely useless.
12. The Maus reference is also cited by the Examiner. Maus is directed to a heat-resistant and regeneratable filter body, which can preferably be coated with catalytically active material, for retaining particles from a gas flow flowing through the filter body, and has flow paths for the gas flow. The flow paths are separated from each other and at least a first filter stage and a second finer filter stage are disposed in succession in flow direction in the respective flow paths (See Maus' abstract. Consequently, this document discloses "...two partial structures which differ in their absorptivity...", but not more. This reference does in particular neither recognize nor solve the problem we were working on and I do not find this document to be particularly relevant.
13. Japanese References: JP 01-270948 (Document 1); JP 2002-180818 (Document 2) and JP 11-324645 (Document 3, equivalent to EP 957241). It is my understanding that these Japanese references were disclosed on the Information Disclosure Statement (IDS) to the US Patent Office. I make the following observations about these references and in my opinion they do not anticipate or make my invention obvious either.
14. Document 1 (JP 01-270948) teaches a construction where a corrugated metal plate is locked between two flat metal plates. Document 1 does not disclose any indication of any of their members being porous. Consequently, this document does not disclose the feature of "...two partial structures which differ in their absorptivity...". Documents 2 and 3 do disclose a filter where a catalyst is deposited on a metallic foam structure, e.g., they do disclose the feature of "...two partial structures which differ in their absorptivity...", but they fail to recognize the problems associated with coating a filter body having two partial structures different in their absorptivity with a coating dispersion. These three references are, in my opinion, not more relevant than the disclosures of Schmidt and Maus.

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15. In my opinion, the references cited by the Examiner (Schmidt and Maus) and the above Japanese references do not make my invention obvious to one of ordinary skill in the art.
16. All statements made herein of my own knowledge are true, and all statements made on information and belief are believed to be true. All statements are made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

  
Dr. Rainer Domesle

10/30/2009  
Date